

A PRELIMINARY REPORT ON THE SYRPHIDAE (DIPTERA) OF BELIZE, WITH THE DESCRIPTION OF A NEW SPECIES¹

Yale S. Sedman²

ABSTRACT. The results of three syrphid fly collecting trips to Belize are summarized. Keys are provided for identification of the twelve genera and 39 species recognized, including one new species which is described.

Knowledge of the insect fauna of Belize is fragmentary and widely scattered in the literature. The program of the Associated Universities for International Education in Tropical Biology, which completed its sixth year of operation in Belize in 1975, has stimulated interest in developing more detailed information concerning the biota of this poorly studied country.

The following report summarizes the results of collections of Syrphidae made by me in Belize during brief collecting trips in 1969, 1970, and 1973, as well as information available from the literature relating to the syrphid fauna. The 39 species recorded may represent but a small sample of the total syrphid fauna but adds much to our knowledge. Only two species of Syrphidae have been recorded from Belize, and both were described as new species by Hull (1941; 1942).

The nomenclature utilized is based primarily on the revisionary work of Thompson (1972) which alters the names of a number of common Neotropical genera. Keys for the separation of the genera, as well as keys to species, are presented so as to facilitate identifications. The specimens listed will be deposited in the Insect Collection of Western Illinois University and duplicates with St. John's College, Belize City, Belize.

The following key will separate the genera of Syrphidae presently known to occur in Belize:

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² Dept. of Biological Sciences, Western Illinois University, Macomb, Illinois 61455.

Key to Genus

1. Face evenly convex; with a stump of vein extending from 4th longitudinal vein *Mixogaster*
- 1' Face tuberculate or concave 2
2. Humeri bare 3
- 2' Humeri pilose 7
3. Head, thorax, and abdomen multipunctate *Nausigaster*
- 3' Body lacking punctures 4
4. Metasternum pilose *Allograptia*
- 4' Metasternum bare 5
5. Abdomen emarginate *Toxomerus*
- 5' Abdomen not emarginate 6
6. Epistoma projecting forward *Pseudodoros*
- 6' Epistoma not projecting beyond facial tubercle or middle of face *Ocyptamus*
7. Third longitudinal vein straight; without a dense patch of black setae on base of hind femora 8
- 7' Third longitudinal vein looped into 1st posterior cell; with dense patch of black setae on base of hind femora 10
8. Arista bare *Sterphus*
- 8' Arista pilose 9
9. Face with three tubercles *Ornidia*
- 9' Face with one tubercle *Copestylum*
10. Marginal cell open *Quichuana*
- 10' Marginal cell closed 11
11. Eyes bare; thorax with opaque tomentum *Meromacrus*
- 11' Eyes pilose; thorax without opaque tomentum *Palpada*

Mixogaster Macquart

Mixogaster sp. CAYO DIST.: Millionario, 9 July 1973, 1 male. Thompson (in litt.) suggests that this is a new species close to *M. ravior* Shannon.

Nausigaster Williston

N. meridionalis Townsend. CAYO DIST.: 7 mi. N. of Blancaneaux Lodge, 11 July 1973, 2 males.

Allograpta Osten Sacken

A. obliqua (Say). BELIZE DIST.: Sibun River, 1 mi. N. of mile 19, 5 July 1973, 2 males.

Key to *Toxomerus* Macquart

1. Scutum black laterally, humeri and posterior calli sometimes yellow 2
- 1' Scutum yellow laterally 3
2. Anterior four femora black on basal 3/4; male and female with black facial stripe *anthrax*
- 2' Anterior four femora yellow on basal 3/4; male face yellow, female with abbreviated black facial stripe *basilaris*
3. Pteropleura yellow 4
- 3' Pteropleura black 5
4. Abdominal tergites 3 and 4 with broadly yellow fascia basally, with faint indications of black spots or geminate vittae *azurlineus*
- 4' Abdominal tergites 3 and 4 with black geminate vittae which are expanded laterally on the basal 1/3 of the segments to form an interrupted linear black fascia *politus*
5. Scutellum black with yellow margin 6
- 5' Scutellum yellow, disc often brownish 8
6. Yellow spot above anterior coxae *floralis*
- 6' No yellow spot above anterior coxae 7
7. Apex of posterior tibiae yellow, basal 2/3 black *pictus*
- 7' Posterior tibiae black *confusus*
8. 2nd costal cell without microtrichiae on basal 3/4, few scattered microtrichiae in apex of cell *laciniosus*
- 8' 2nd costal cell with dense microtrichiae, at least in apical 1/2 9
9. Scutellum with dense black setae; basal cells of wing generally without microtrichiae *productus*
- 9' Scutellum with yellow setae mixed with scattered black setae; basal cells of wing with dense microtrichiae *musicus*

T. anthrax (Schiner). TOLEDO DIST.: Columbia Forest Sta., 5 July 1970, 2 males; 9 July 1970, 1 fem.; 30 July 1970, 1 fem.; 2 Aug. 1970, 1 fem.; 3 Aug. 1970, 1 fem.

T. basilaris (Wiedemann). CAYO DIST.: Central Farm, 24 July 1970, 10 males, 1 fem.; TOLEDO DIST.: Columbia Forest Sta., 5 July 1970, 1 male.

T. azurlineus (Hull). CAYO DIST.: Cayo, 21 Feb. 1909, 1 male, F. Knab, Coll.; 7 mi. N. of Blancaneaux Lodge, 11 July 1973, 1 fem.; TOLEDO DIST.: Columbia Forest Sta., 8 July 1970, 1 male.

T. politus (Say). CAYO DIST.: Spanish Lookout, 26 July 1970, 1 male, 3 fem.

T. floralis (F.). TOLEDO DIST.: Columbia Forest Sta., 2 July 1970, 1 male.

T. pictus (Macquart). TOLEDO DIST.: Columbia Forest Sta., 1 July 1970, 1 male, 1 fem.; 3 July 1970, 1 male; 4 July 1970, 2 males; 2 Aug. 1970, 1 fem.; CAYO DIST.: Spanish Lookout, 24 July 1970, 1 fem.

T. confusus (Schiner). BELIZE DIST.: Sibun River, 1 mi. N. of mile 19, 5 July 1973, 1 fem.; CAYO DIST.: Millionario, 9 July 1973, 2 males.

T. laciniosus. (Loew). STANN CREEK DIST.: Lynum School, 24 July 1970, 1 fem.; TOLEDO DIST.: Columbia Forest Sta., 1-8 July 1970, 14 males, 6 fem.

T. productus (Curran). CAYO DIST.: Rio Frio Cave, 8 July 1973, 1 male.

T. musicus (F.). CAYO DIST.: Spanish Lookout, 1 July 1970, 1 male; STANN CREEK DIST.: Lynum School, 24 July 1970, 2 fem.

Pseudodoros Becker

P. clavatus (F.). CAYO DIST.: Rio Privassion, 12 July 1973, 1 fem.

Key to *Ocyptamus* Macquart

1. Second abdominal segment broader than long 2
- 1' Second abdominal segment longer than broad 3
2. Pteropleura white pilose; posterior basitarsi yellow *gastrotactus*
- 2' Pteropleura black pilose; posterior basitarsi dark brown *dimidiatus*
3. Face black 4
- 3' Face yellow 5
4. Abdomen with yellow spots on black background, one pair of spots on tergite 2, two pair on tergites 3, 4 and 5 *adpersus*
- 4' Abdomen black *panamensis*
5. Mesopleura black on anterior half *arx*
- 5' Mesopleura yellow *lepida*

O. gastrotactus (Wiedemann). TOLEDO DIST.: Columbia Forest Sta., 4 July 1970, 1 fem.

O. dimidiatus (F.). TOLEDO DIST.: Columbia Forest Sta., 5 July 1970, 1 male; 30 July 1970, 2 fem.

O. adpersus (F.). TOLEDO DIST.: Columbia Forest Sta., 5 July 1970, 1 male; 1 Aug. 1970, 1 fem.

O. panamensis (Curran). TOLEDO DIST.: Columbia Forest Sta., 5 July 1970, 1 male.

O. arx (Fluke). TOLEDO DIST.: Columbia Forest Sta., 3 July 1970, 1 fem.

O. lepida (Macquart). TOLEDO DIST.: Columbia Forest Sta., 1 July 1970, 1 male; 2 Aug. 1970, 1 fem.; 4 Aug. 1970, 1 male.

Sterphus Philippi

S. (Crepidomyia) coarctatus (Wiedemann). TOLEDO DIST.: Columbia Forest Sta., 1 July 1970, 2 males.

Ornidia Lepeletier and Serville

O. obesa (F.). CAYO DIST.: Blancaneaux Lodge, 22 July 1970, 1 fem.; TOLEDO DIST.: Columbia Forest Sta., 1 Aug. 1970, 1 fem.; 3 Aug., 1 fem.

Key to *Copestylum* Macquart

1. Scutellum elongate, with 2 distinct lateral roughened areas *tricinctum*
- 1' Scutellum broader than long, without lateral roughened areas 2
2. Scutellum without pre-apical depression 3
- 2' Scutellum with pre-apical depression 4
3. Abdomen black with violet reflections; wings black on basal 1/2; large robust species, 14 mm. long *dispar*
- 3' Abdomen pale yellow basally; wings without black markings; smaller species, 8-10 mm. long *correcta*
4. Wings marked with brown spots, medially on anterior margin and apically; scutellar depression shallow and brown, contrasting with remainder of yellow scutellum *tympanitis*
- 4' Wings without apical spots 5
5. Abdomen pale yellow with 3 pair of lateral black spots on tergites 2, 3 and 4; wings without microtrichiae *pallens*
- 5' Abdomen without black spots; wings with microtrichiae 6
6. Face black *belizensis*, n. sp.
- 6' Face yellow 7
7. Hind femora blackish except on apical 1/5 *musicana*
- 7' Hind femora yellow on basal 4/5 *mocana*

C. tricinctum (Bigot). TOLEDO DIST.: Columbia Forest Sta., 1-9 July 1970, 5 males, 6 fem.; 18 July 1970, 1 fem.; 30 July 1970, 2 males.

C. dispar (Macquart). CAYO DIST.: Mt. Baldy Beacon, 12 July 1973, 1 fem.

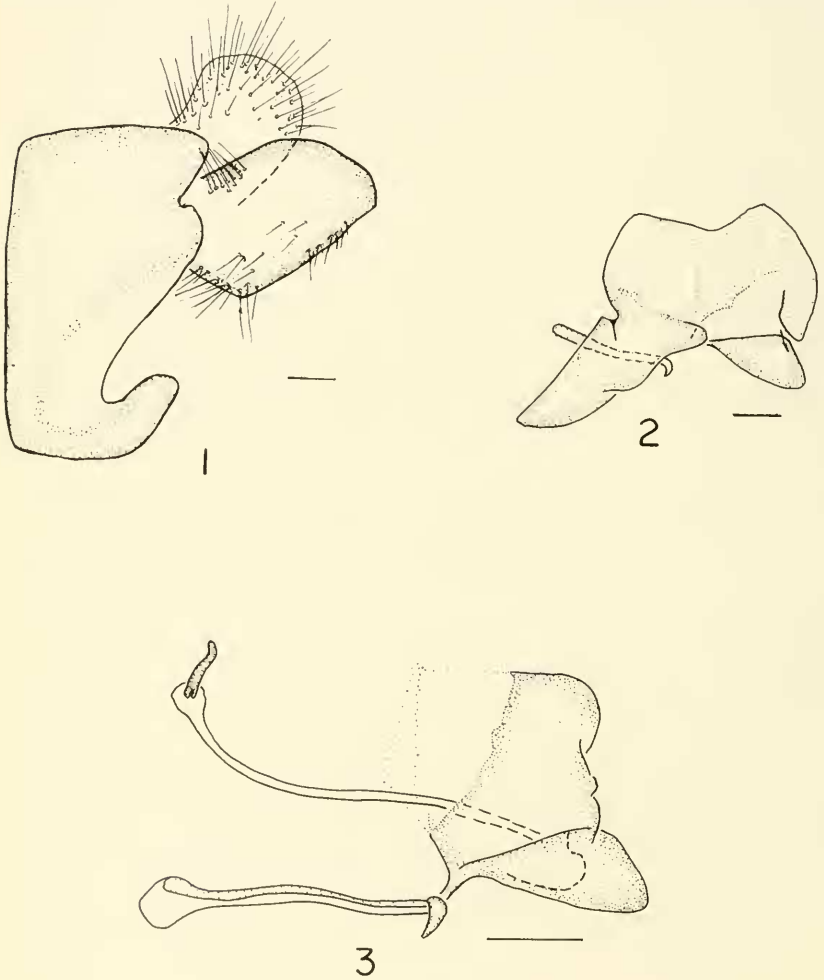
C. correcta (Curran). TOLEDO DIST.: Columbia Forest Sta., 18 July 1970, 1 male; 1 July 1970, 1 male.

C. tympanitis (F.). TOLEDO DIST.: Columbia Forest Sta., 1-9 July 1970, 6 males, 15 fem.; 18 July 1970, 2 fem.; 1 Aug. 1970, 2 fem.

C. pallens (Wiedemann). TOLEDO DIST.: Columbia Forest Sta., 2 July 1970, 1 fem.; 1 Aug. 1970, 2 males; 2 Aug. 1970, 1 fem.

C. belizensis, NEW SPECIES

Male. Face shining black, broadly silver pollinose below antennae; whitish pile on lateral slopes, on tubercle and on epistoma, absent above tubercle; facial tubercle prominent, projecting beyond antennal prominence. Cheeks shining black with golden pile, separated from face by broad pale brown stripe which is expanded distally. Front



Figures 1-3. *Copestylum belizensis*, n. sp. 1. Tergite 9, male genitalia. 2. Sternite 9, male genitalia. 3. Axial System, male genitalia.

small, shining black with short white pile. Antennae brown, basal two segments shining; third segment 3X length of second and gradually tapered apically. Eyes broadly joined, almost 2/3 length of face; upper medial facets enlarged; densely black pilose on upper 5/6. Vertical triangle very small, only slightly raised; pile long, black. Occiput with short black bristles above, yellowish on white pollinose areas below. Mouthparts 2X length of face.

Scutum shining black with opalescent blue pattern of 4 narrow stripes, the medial pair united broadly anterior to scutellum; humeri and posterior calli light tan; bristles black; pile golden, dense and short, with longer pale brown pile; no prescutellar bristles. Pleurae brown with pale pollen; pile black on pteropleurae, paler elsewhere; a single black bristle on the mesopleuron. Legs black except for reddish apex of femora and base of tibiae, all basitarsi, and 2nd tarsal segment on mesothoracic and metathoracic legs. Halteres yellow with white knob. Scutellum shining brown, with pebbled transverse depression; dense golden pile short, intermixed with longer brown and black pile; apex of scutellum with 3 pair of delicate long black bristles, medial 1/3 without bristles; sub-scutellar fringe black, isolated laterally. Wings with sub-marginal cell broadly open; microtrichiae evenly distributed on apical 1/2 of wing, absent in most cells basally; marked with blackish clouds on most cross veins.

Abdomen short and broad, tergum shining black except for medial yellow spots on tergite two; with short, dense, golden pile on tergite two except for a narrow black band posteriorly; third and fourth tergites with black pile. Sternite two translucent yellow, narrow yellow bands on sternites three and four, elsewhere shining black. Male genitalia (figs. 1-3) with well-developed superior lobes, no inferior lobes.

Female. Similar to male except for the following: front shining black with a pair of raised dilute yellow sub-triangular spots next to eyes situated in a depressed area between raised areas above antennae and below vertical triangle; eyes without enlarged facets; opalescent blue pattern of scutum more distinct, stripes broader; abdomen with blue opalescent cast.

Length of the holotype and allotype is 7 mm., while the paratypes measure 5 mm.

MATERIAL EXAMINED: TOLEDO DIST.: Columbia Forest Sta., 5 July 1970, 1 male (holotype), 3 fem. (allotype and 2 paratypes).

This species will trace to *C. obscurior* (Curran) in Curran (1939). Curran's key can be modified as follows to separate *C. belizensis* from closely related species:

- 34. Lower half of the face reddish in the middle *plumanni* (Curran)
Face black or reddish 34a
- 34a Face and front reddish yellow; scutum brownish *bellula* (Williston)
Face and front black; scutum shining black 34b
- 34b Yellow stripe separating face from cheeks narrow; scutellum with
dense basal patches of pile *obscurior* (Curran)
Yellow stripe separating face from cheeks broadened near oral
opening; pile of scutellum evenly distributed *belizensis*, n. sp.

C. musicana (Curran), TOLEDO DIST.: Columbia Forest Sta., 30 July 1970, 1 fem.
C. mocana (Curran), TOLEDO DIST.: Columbia Forest Sta., 3 Aug. 1970, 1 fem.

Quichuana Knab

Q. picadoi Knab, TOLEDO DIST.: Columbia Forest Sta., 1 July 1970, 1 fem.

Meromacrus Rondani

M. currani Hull, "BRITISH HONDURAS", 1 female, C. L. Lundell, coll.

Key to *Palpada* Macquart

1. Scutum black vittate on grey background *furcata*
- 1' Scutum fasciate or without conspicuous markings 2
2. Scutum uniformly dull reddish brown *obsoleta*
- 2' Scutum fasciate 3
3. Scutellum black on basal 1/4, yellow on remainder *scutellaris*
- 3' Scutellum brown or yellow 4
4. Wings without microtrichia 5
- 4' Wings with microtrichia 6
5. Posterior calli black pilose *albifrons*
- 5' Posterior calli yellow pilose *rufiventris*
6. Hind tibiae black ciliate *fasciata*
- 6' Hind tibiae with short sparse pile *aemula*

P. furcata (Wiedemann). STANN CREEK DIST.: Lylum School, 26 July 1970, 2 males.

P. obsoleta (Wiedemann). CAYO DIST.: Mt. Baldy Beacon, 12 July 1973, 2 males, 6 fem.; Blancaneaux Lodge, 22 July 1970, 1 fem.; Rio Privassion, 12 July 1973, 3 fem.; TOLEDO DIST.: Columbia Forest Sta., 3 Aug. 1970, 1 fem.

P. scutellaris (F.). CAYO DIST.: Mt. Baldy Beacon, 12 July 1973, 1 fem.; TOLEDO DIST.: Columbia Forest Sta., 8 July 1970, 1 male, 2 fem.

P. albifrons (Wiedemann). BELIZE DIST.: St. Johns College, 2 July 1973, 2 males; TOLEDO DIST.: Columbia Forest Sta., 18 July 1970, 1 male.

P. rufiventris (Wiedemann). TOLEDO DIST.: Columbia Forest Sta., 1 July 1970, 1 fem.; 3 July 1970, 1 male, 1 fem.; 8 July 1970, 1 male, 2 fem.

P. fasciata (Wiedemann). BELIZE DIST.: St. Johns College, 3 July 1973, 1 male, 1 fem.; STANN CREEK DIST.: Lylum School, 26 July 1970, 5 males, 3 fem.

P. aemula (Williston). TOLEDO DIST.: Columbia Forest Sta., 30 July 1970, 1 fem.

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